LOGITECH

SCANMAN™

GRAY SCALE SCANNER

MODEL
32
MAC

USER'S
GUIDE

ScanMan   Model 32

FCC ID:

DZL6QBSCNR

Certified to comply with the limits for a Class B computing device pursuant to Subpart J of Part 15 of FCC Rules. See instructions in FCC Statement if interference to radio reception is suspected.

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This equipment generates and uses radio frequency and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.

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"How to Identify and Resolve Radio-TV Interference Problems".

This booklet, # 004-000-00345-4, is available from:
U.S. Government Printing Office, Washington D.C., 20402.

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ScanMan

User's Manual

ScanMan   Contents

What is ScanMan Model 32?

ScanMan Model 32, available only from Logitech, consists of scanner software and a hand-held scanner which connects to the SCSI interface on your Macintosh. ScanMan can:

- Scan an image, whether a line drawing or a photograph in up to 32 grays.
- Manipulate the scanned image, "the document", by cropping, moving, deleting or rotating it.
- Retouch the document using a variety of tools.
- Copy the document, or a selection of it, to the Clipboard.
- Save the document, or a selection of it, as one of several output types which can then be opened in a wide range of applications.
- Print the document, or a selection of it.

What you will need to run ScanMan

ScanMan runs on the Macintosh Plus, Macintosh SE, and Macintosh II family of computers. ScanMan requires System version 6.0 or later.

If you have a color or gray-scale monitor, ScanMan can display images in up to 32 grays. Otherwise, ScanMan simulates different shades of gray using patterns of black and white dots (called "halftones").

For convenience, we recommend that ScanMan be installed on a hard disk. If you don't have a hard disk drive on your system, ScanMan can be run from a floppy disk.

IMPORTANT   Read "Chapter 1: Installation" before installing and running ScanMan.

About this manual

This manual explains how to install and use ScanMan. Before you get started with ScanMan, you should already be acquainted with your Macintosh. If you're not familiar with terms like "clicking" and "dragging", spend some time with the manuals that came with your computer.

Update for users of ScanMan Version 1.0

If you are already familiar with ScanMan version 1.0, you may be interested in knowing the principal differences between that version of ScanMan and this one (version 2.0).

The new features include:

- Support for color monitors, so you can now scan and edit documents in 32 grays.
- An expanded collection of tools.
- Brightness and contrast controls which work after scanning.
- Better compatibility with a wide range of application programs.
- The ability to define and change the resolution of an image.
- An improved user interface.

LOGITECH — how to contact us

Technical support

LOGITECH is a leading worldwide manufacturer of personal computer peripherals. We are committed to the quality of our products and to supporting our registered customers. In order to benefit from our technical support services, please complete your registration card and return it to the address shown on the card.

If you have any problems using ScanMan, contact our technical support group at one of the addresses shown below.

When you call us, please ensure that you can easily reach your Macintosh.

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Installation

This chapter explains how to install the ScanMan software and hardware.

NOTE　　Please check the ReadMe file on your ScanMan disk for late breaking information that may not have been available when this manual went to press

Installing the ScanMan software

ScanMan includes both an application program and a desk accessory. Either one or both may be installed.

Installing the ScanMan application

To install the ScanMan application program:

1. Drag the ScanMan application onto your System disk.
2. Drag the ScanMan Driver file into your System Folder.
3. Restart your Macintosh.

Installing the ScanMan desk accessory

To install the ScanMan desk accessory you will need to use the Font/DA Mover application, version 3.8 or later. You should be able to find this on the "Utilities #2" disk that came with your Macintosh.

1. Double-click on the ScanMan DA icon.
2. Install ScanMan DA into your System file.
3. Click on Quit.

IMPORTANT

If you use MultiFinder, it is strongly recommended that you use ScanMan as an application rather than a desk accessory.

Installing the scanner

IMPORTANT

Do not plug the connector from the scanner head directly into the Macintosh.

Once you have installed the software, you are ready to connect the SCSI* Adaptor Box (the large, rectangular box), the power supply adaptor and the scanner. The way in which you connect the SCSI Adaptor Box depends on whether you have any SCSI devices attached to your computer. This you can tell by looking at the SCSI port at the back of your Macintosh. The SCSI port is identified by one of these two symbols:
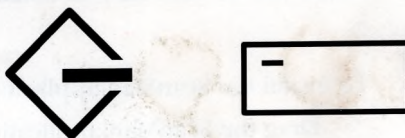
If no SCSI device is attached to your SCSI port then follow the instructions given in the next section.

However, if you have one or more SCSI devices already attached to your Macintosh via the SCSI port, installing the scanner can be more complex as more steps are involved. Please refer to *Appendix A: Installing the scanner when one or several SCSI devices are already attached*.

*NOTE: SCSI (pronounced "SKUH'-ZEE") stands for *Small Computer System Interface*. The SCSI specification which standardises the connection of peripherals to small computers was developed by various companies and has been approved by the American National Standards Institute (ANSI). The SCSI interface allows the exchange of data between your computer and up to seven devices which can be attached to it via the SCSI port.

Connecting the SCSI Adaptor Box and scanner

If no SCSI devices are attached to the SCSI port of your Macintosh, go to Step 3. If your Macintosh doesn't have a hard disk, also go to Step 3.

1. Open ScanMan by double-clicking on the ScanMan icon. A dialog box opens which displays the ID numbers of the Macintosh, its hard disk and any other SCSI devices:

```
ScanMan not found

SCSI ID:   0   1   2   3   4   5   6   7
           ⇦   -   -   -   -   -   -   ▦

    Quit        Continue Without Scanner
```
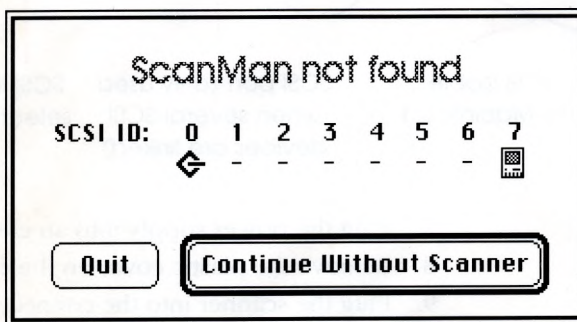
The SCSI symbol representing the hard disk usually appears underneath ID number 0.

If there is already a device represented under ID 2, it will be in conflict with the ID number of the ScanMan scanner. In this case, follow the steps described in *Appendix A* in the section *Changing the ID number of the scanner*.

2. Click Quit.
3. Shut down your computer and then switch it off.
4. Check that the SCSI Adaptor Box is switched off.

IMPORTANT   Never connect cables while a device is switched on. This may damage your equipment.

5. Put the SCSI Adaptor Box in a convenient place, close to your computer.
6. Insert the power supply connector in the power jack socket on the back of the SCSI Adaptor Box.

Back

SCSI cable
(to Macintosh)

SCSI port (only used
when several SCSI
devices are linked)

SCSI ID
selector

Power
jack

Power switch
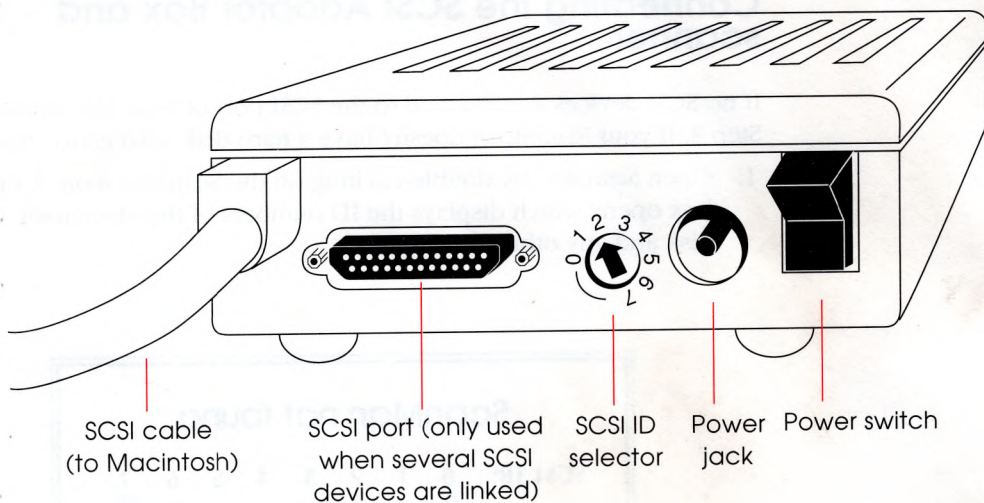
7. Plug the power supply into an electrical outlet.

8. Remove the plastic cover on the end of the scanner's mini-plug.

9. Plug the scanner into the connector on the front of the SCSI Adapter box.

Front

LOGITECH

Power indicator light

Connect the mini-plug to the
scanner port here
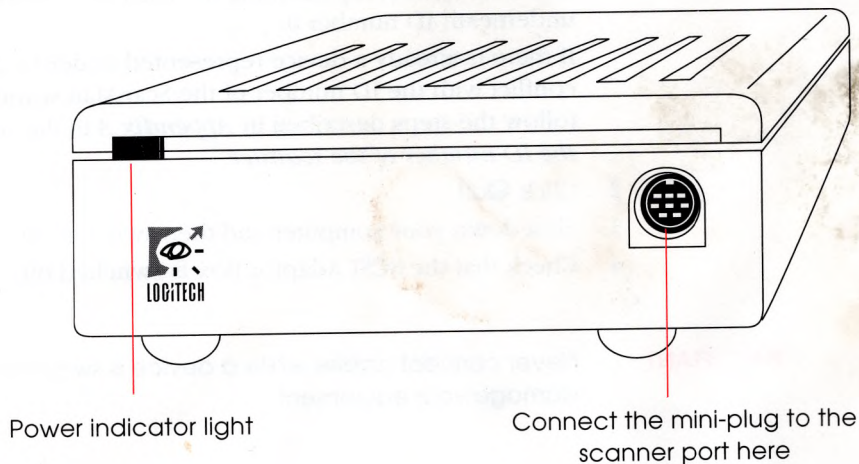
10. Connect the thick cable at the back of the SCSI Adaptor Box to the SCSI port on the back of the Macintosh.

Regardless of the Macintosh model, the SCSI port is always marked by one of these symbols:

11. Switch on the SCSI Adaptor Box and all other SCSI devices. The green light on the front of the SCSI Adaptor Box *must* be on. If this is not the case, check your connections.

12. Installation is now complete. Restart your Macintosh.

Apple Computer, Inc recommend that you always switch on the SCSI Adaptor Box and all other SCSI devices *before* starting up your computer. If you have a Portable and forget to switch on your SCSI devices first, it will not start up correctly. Switch on your SCSI devices and restart it. For further information on the SCSI interface, refer to your Macintosh manual.

Opening ScanMan

To test the installation and verify that everything is working properly, double-click on the ScanMan icon.

When it is opened, ScanMan verifies that:

- the ScanMan Driver is present in the System folder,
- the SCSI Adaptor is properly installed, turned on and operating correctly, and
- the scanner is connected.

If anything is wrong with the installation, the ScanMan application will display an alert identifying the problem. You can Quit, Continue without scanner, or rectify installation as necessary. In the case where you continue after an alert, you must first choose Setup in the Scan menu.

Running ScanMan

This chapter describes the scanner and how to scan an image. We recommend that you read this chapter if you haven't used a scanner before.

Opening ScanMan

Double click on the ScanMan icon. ScanMan will open and the ScanMan menus will appear. You are now ready to scan an image.

  File   Edit   Scan   Tools   Transform

The menu bar

The ScanMan scanner

Scanner Head Window — Shows the position of the scanner over the image

Scanning Speed Light — Remains on when you are scanning at the correct speed

Resolution Switch — Sets a resolution from 100 to 400 dots per inch (dpi)

Guide line — Shows the positionof the head over the image

Scan Button — Scanning continues while this button is held down

Mode Switch — Sets the desired scanning mode: Line art or Dither

Brightness Dial — A notch (more widely spaced) indicates the middle setting

Choosing a scanning mode

Before you start to scan you need to know:

- The type of image you will be scanning
- The target application in which the scanned image will be used
- The printer which will be used for the final output

Type of image

ScanMan scans images in two modes, Line Art and Gray:

- Line Art mode creates a document containing only black and white (no gray).
- Gray mode creates a document containing 32 shades of gray, from black to white. If you have a color monitor, these grays will be displayed on your screen. If not, the grays will be simulated using halftones (patterns of black and white dots).

Text and technical drawings are examples of images which are best scanned in Line Art mode. Photographs are best scanned in Gray mode. (As you gain experience with ScanMan, you may want to experiment with images by breaking these rules.)

Target application

Most of the time you will be scanning images for use in other application programs, such as:

- Word processing
- Presentation
- Optical character recognition (OCR)
- Paint or draw programs
- Desktop Publishing (DTP)

Therefore it is worth considering the requirements of the application in advance. This is discussed further in *Chapter 5: More about ScanMan*.

Final Output

In ScanMan, "Output" is a generic term that covers saving, printing and copying via the Clipboard to another application. A document can be ouput at a particular rendering, size and resolution. "Rendering" is the method used to represent the shades of gray. The "Resolution" is the number of pixels per inch. The "Size" is is the height and width of your document.

An image which is scanned at a resolution of 400 dpi will be more detailed and of a better quality than one scanned at 100 dpi:

100 dpi — Least information of the scanned image

200 dpi

300 dpi

400 dpi — Most information of the scanned image
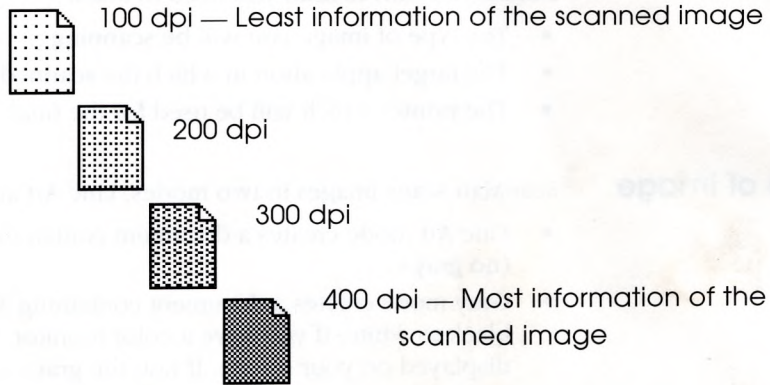
When you are scanning in Line art mode you should choose the same resolution for the scanner as the printer on which the document will be printed. For example if you want to print the document on a laser printer which has a resolution of 300 dpi, you should scan the image at 300 dpi.

However when scanning in Gray mode, use the highest resolution possible, that is 400 dpi. This provides the most detail but it does require more memory.

Scanning in Line art mode

This section shows you how to scan in Line Art mode.

1. Set the mode switch on the scanner to line art (the square symbol or slash depending on the model you have).

Preparing the scanner

2. Set the resolution switch to "3". In other words to 300 dots per inch — this is a typical printer resolution.

1 2 3 4
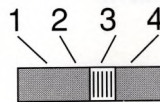
3. Choose Scan Line Art from the Scan menu.

Starting to scan

The Scan dialog box is then displayed and the scanning light appears in the scanner window.
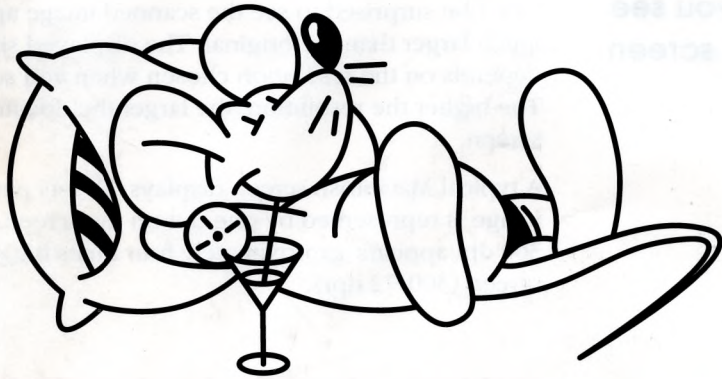
Sample scan
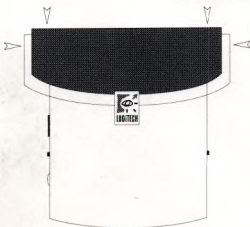
1. Take the illustration shown above as an example. Look through the window to position the scanner at the top of the image. You could also use the four lines at the top corners of the scanner as a guide to the scan width.

2. Hold down the Scan button and drag the scanner down over the image. Depending on the scanner model, there is a Scanning Speed Light on the top of the scanner which will start to blink as you approach maximum scanning speed. When you scan too fast, the Scanning Speed Light goes out. If this happens, the resulting document will be of inferior quality, so you should rescan.

   While you are scanning, part of your image is displayed in the Scan window on the screen.

   The Scan window also shows you how much memory is remaining. When you have used all of the available memory, scanning will stop automatically. (Images scanned at lower resolutions require less memory).

3. When you have finished scanning, click on the Done button in the Scan window.

If **Automatic Stop** is enabled, scanning will stop automatically when you stop moving the scanner or release the Scan button. See *Setup* in *Chapter 6* for more information on Automatic Stop.

4.   Your scanned image will appear in a new Untitled window.

What you see on the screen

Don't be surprised to see the scanned image appear on the screen very much larger than the original. The displayed size of the document depends on the resolution chosen when you scanned the original image. The higher the resolution, the larger the document will appear on the screen.

A typical Macintosh screen displays 72 dots per inch. Each dot on the image is represented by one dot on the screen, so an image scanned at 300 dpi appears approximately four times bigger when displayed on the screen (300/72 dpi).

Using the Brightness dial to pick up extra details

When you scan in Line Art mode, every tone has to be represented as either black or white. Therefore, you have to tell ScanMan where the dividing line (threshold) between black and white is going to be. Anything to the left of this demarcation line will be treated as white, anything to the right of it, as black. The dividing line between the dark and light areas is set by the Brightness dial on the scanner.

Start with the Brightness dial at its middle setting. To find out where this is, turn the dial. The notch representing the middle setting is more widely spaced than the others.

The only way to find out which is the best setting for a particular image is by trial and error. For example, by changing the brightness on the scanner you may find that it is possible to pick up details which would otherwise not appear, (such as areas of white against gray).

Scanning in Gray mode

The procedure for scanning images in Gray mode is identical to scanning in Line art mode, although the effect is very different. If you want to follow the instructions given below, you need to find a photograph, for example a postcard.

Preparing the scanner

1. Set the mode to Dither (the circle symbols):

There are three settings which determine the size of the grains used to make up the grays in the document. The smallest dot (far left above the switch) gives the smallest grains and is therefore suitable for scanning images with fine details.

2. Set the resolution switch to 4 (400 dpi). It is preferable to always use the highest possible resolution when scanning in Gray mode:
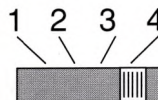
Starting to scan

1. Choose Scan Gray from the Scan menu. If you have already scanned a document you will be prompted to save it.
2. Position the scanner just above the top of your image by looking through the scanner window or using the guide lines around it.
3. Hold down the Scan button and drag the scanner down over the image.
4. When you have finished scanning, click on the Done button in the Scan window. If Automatic Stop is enabled, scanning will stop automatically when you stop moving the scanner or release the Scan button. See *Setup* in *Chapter 6* for more information.
5. Your scanned image will appear in a new window.

Summary

You have now learned how to scan in Line art and Gray modes. The best way of learning more about your scanner is to experiment with it.

Working on a document

This chapter describes how to manipulate and retouch a document. For example how to:

- Change the brightness and contrast in Gray mode documents.
- Work with selections, (resizing, flipping and rotating).
- Retouch the document using the tools on the **Tools** menu.

The Document window

Once you have scanned an image, it appears in the Document window. The size of the window is determined by the apparent size of the document.

Zoom box

Alter the brightness
(Gray mode only)

Alter the contrast
(Gray mode only)

Resize the window by dragging the
pop-up Grow box
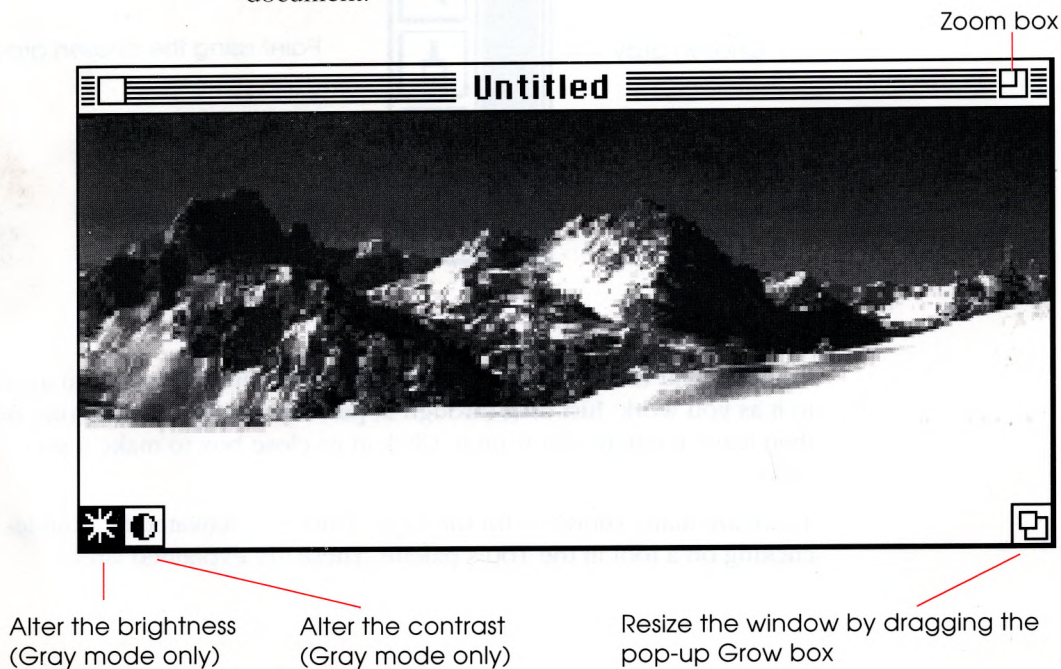
Brightness and contrast control

If you scanned the image using Scan Gray, then you can alter its brightness and contrast. To adjust the brightness:

1. Point to the Brightness icon in the Document window. The Brightness and Contrast controls will pop up.

2. Increase the brightness by dragging the slider upwards or reduce it by dragging it down. To alter the brightness in small increments, click on the top or bottom of the bar.

3. Reset the brightness to its original level by double-clicking on the icon.

You can adjust the contrast in the same way.

These controls are used for fine tuning the document. For any major adjustments to the contrast or brightness, change the setting of the Brightness dial on the scanner before you rescan the image.

The Tools menu/palette
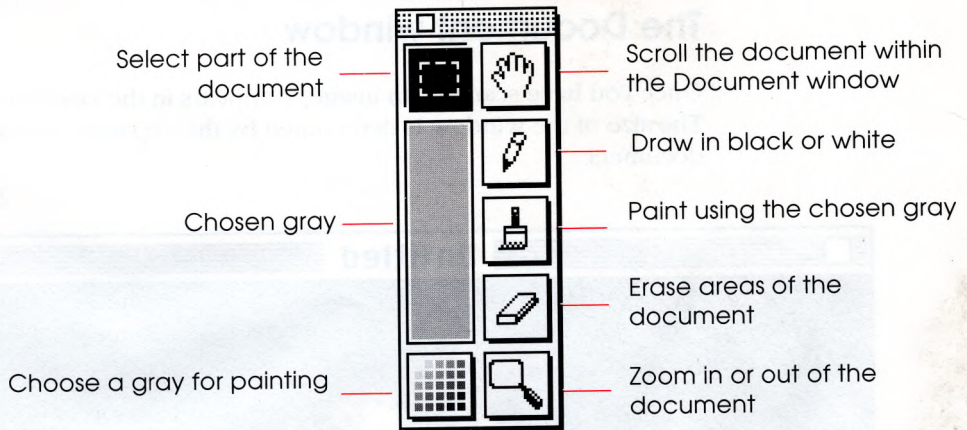
Select part of the document — Scroll the document within the Document window

Draw in black or white

Chosen gray — Paint using the chosen gray

Erase areas of the document

Choose a gray for painting — Zoom in or out of the document

You can "tear off" the Tools menu so that you can have constant access to it as you work. Just drag through it, past the bottom or off to one side; then leave it where you want it. Click in its close box to make it go away.

There are many shortcuts for the tools which are activated by double-clicking on a tool in the Tools palette. These are explained later.

Working with selections

Once you have scanned an image, the next step is to do any editing you desire.

Selecting

Use the selection tool to select a rectangular area of the image. Drag diagonally to select.

Once you have created a selection, you can move it, change its size, delete it, copy it, and save it.

If you need to create a selection of a particular size, choose Show Info from the Edit menu. This will cause the Info window to appear. It shows you the size of your selection as you create it..

The Info window

8.82

5.89   cm

1:1
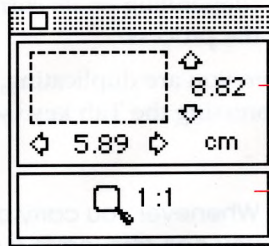
Dimensions of current selection

Zoom level or current scale

Selecting the Entire document

You can select the entire document by double-clicking on the Selection tool, or by choosing Select All from the Edit menu. (Note that this selects the entire document, not just the portion visible in the window).

Moving the Selection Frame

If the selection you have created isn't exactly where you want it, you can move the frame of the selection (without changing the document).

1. Make a selection.
2. Point to the frame of the selection. Your cursor will change to look like this:
3. Drag the frame to position it where you want it.

Moving the Selection

Once you have selected an area, you can drag it to where you want.

1. Make a selection.
2. Point inside of the selection. Your cursor will change to look like this:
3. Drag the selection to position it where you want it.

Resizing and scaling

1. Hold-down the Command key while you point to the edge or corner of the selection. The cursor will change shape to indicate the direction in which you will be able to stretch the picture.
2. Resize the selection by dragging in the desired direction.

If you also hold down the Shift key, ScanMan will maintain the original proportions as you resize the selection.

Flipping and rotating

To flip, rotate or invert a selection, simply choose the appropriate command from the Transform menu. For further information on these commands and other possibilities, see *Chapter 5: The ScanMan menus*.

Making a selection transparent

Usually a selection is opaque and, when pasted or moved, will obscure any underlying areas. However, you can make the selection transparent.

1. Make a selection.
2. Press the Tab key — this makes the selection transparent or opaque (depending on its current state). Pressing the Tab key again reverses the process.

When you are duplicating, you can also make the selection transparent by pressing the Tab key (see *Duplicating* below).

NOTE   Whenever you carry out any of the functions discussed above, you can also leave a copy of the current selection by holding down the Option key.

Duplicating

1. Make a selection.
2. Hold-down the Option key while you drag the selection. A copy of the selection will be left behind.

Retouching a document

You can retouch a document by:

- Painting over areas to enhance or clarify them.
- Drawing in missing areas or adding extra detail.
- Erasing areas or removing unwanted pixels.

Zooming

You can zoom into the area you are retouching by selecting the Magnifying Glass. Each click with this tool magnifies the document. To zoom out of the document, hold down the Option key and click. You can also select both Zoom Out and Zoom In from the Edit menu.

To zoom all the way out, so that your whole document is visible, double-click on the Magnifying Glass. To restore the previous zoom, double-click again.

Your current zoom factor is displayed in the Info window (choose Show Info from the Edit menu to display the Info window).

Please note that the size of the tools does not change when you zoom. Therefore, they may draw surprisingly large areas when you have zoomed in.

Painting

You can touch-up your document with the Brush tool using any of the 32 grays. There is a range of brush sizes and shapes available.

- To choose a brush shape, double-click on the Brush tool.
- To choose a gray, click on the Shade button in the Tool palette.
- To force a straight vertical or horizontal motion, hold down the Shift key as you paint with the Brush.

Drawing

You can redraw areas of the document, or retouch it pixel by pixel. The pencil draws in the opposite color to the pixel on which you first click, that is either black or white. If you click on a gray pixel, you will start drawing in black. You can force the tool to move in a straight line by holding down the Shift key while you draw.

- To zoom to the greatest enlargement, double-click on the Pencil in the Tools palette — double-click again to revert to the previous scale.

Erasing

To remove irregular shaped areas it is easiest to use the Eraser. The Eraser is different from the other tools as it always erases the surface beneath it, regardless of the scale you are working in. In other words the greater the magnification, the fewer pixels it erases. You can erase areas in a vertical or horizontal straight line by holding down the Shift key while you erase.

- To clear the selection or complete document if nothing is selected, double-click on the Eraser in the Tools palette.

Scrolling

You can scroll around a document which is larger than the window using the Hand.

You can also move quickly to other areas of the document. For example you can move to:

- The **top-left corner** of the document by double-clicking on the Hand in the Tools palette.
- The **bottom-right corner** of the document by holding down the Shift key and double-clicking on the Hand in the Tools palette.
- To scroll faster hold down the Option key while moving the hand.

Another fast way to get around your document is to zoom-out by double-clicking the Magnifying Glass. Then, choose the Magnifying Glass tool and zoom-in on the area of interest.

Output formats

ScanMan creates both high-resolution and grayscale documents which other software or printers may be unable to handle. ScanMan therefore provides a variety of renderings and resolutions to cope with the different capabilities of other software and devices. This chapter describes ScanMan's "output formats".

"Output format" is a generic term used to describe the Copy Format, Save Format and Print Format dialog boxes. The commands Cut, Copy, Copy As..., Save, Save As... and Print... make use of output formats.

Command	Dialog box
Cut	Copy Format
Copy	Copy Format
Copy As...	Copy Format
Save	Save Format
Save As...	Save Format
Print...	Print Format

The output format dialog box is shown below:

```
┌─────────────────────────────────────────┐
│              Copy Format                  │
│  ┌──────────────────────────────────────┐│
│   Rendering          Size                 │
│  ┌────────────┐  ┌────────────────────┐  │
│  │◉ Gray      │  │◉ Same as screen    │  │
│  │○ Advanced  │  │○ Same as original  │  │
│  │  Halftone  │  │○ Custom            │  │
│  │○ Screen    │  │                    │  │
│  │  Halftone  │  │Width:   5.00    cm │  │
│  │○ High      │  │Height:  5.00    cm │  │
│  │  Contrast  │  │☐ Keep proportions  │  │
│  └────────────┘  └────────────────────┘  │
│   Resolution                              │
│  ┌──────────────────────────────────────┐│
│  │◉ │ 72 dpi as Screen or ImageWriter │ ││
│  │○ Custom                              ││
│  └──────────────────────────────────────┘│
│                     [ Cancel ]  [[ OK ]]  │
└─────────────────────────────────────────┘
```
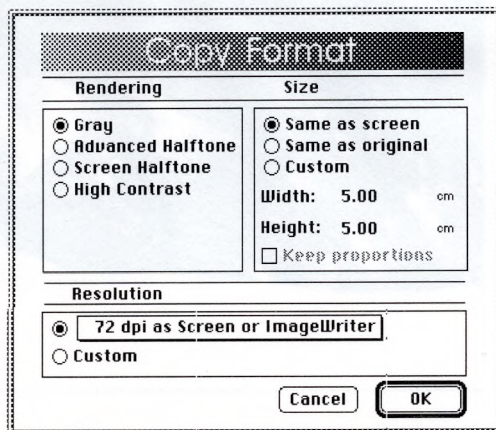
You can define a different output format for each type of:

- Document whether Line art or Gray
- File format whether MacPaint, PICT or TIFF

When you define an output format, you will not affect formats already defined for other document or file types. All output formats are automatically saved in your user preferences file.

Rendering

There are four different types of screen rendering:

- Gray
- Advanced Halftone
- Screen Halftone
- High Contrast

Gray

Gray is only available when scanning in Gray mode and when your Macintosh supports color. (See *Glossary of terms*)

Example: Documents that you wish to display on a color monitor or use in programs which support grays (like Studio/8 or Digital Darkroom).

NOTE   If you intend to print in gray mode directly from ScanMan on a laser printer, then you require the following versions or later of the System and printer software: System 6.03, Laser Prep 6.0 and LaserWriter 6.0. (The dithering process necessary for printing gray level documents is generally handled by the final application).

Gray mode

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The following table shows when Gray is available as an option in the different output format dialog boxes.

Operation	Macintosh which supports color	Macintosh which does not support color
Copy	Available	Not available
Print	Available	Not available
Save as MacPaint	Not available	Not available
Save as PICT	Available	Not available
Save as TIFF	Available	Available

Advanced Halftone

Advanced Halftone simulates the grays of the original image using a special halftoning process called "error diffusion". Use the Advanced Halftone format to simulate gray in application programs which don't support color (like HyperCard).

Advanced Halftone is always available for documents scanned in Gray mode.

You can transfer advanced halftones to any word processor using Copy and Paste. The higher the resolution that you use, the greater the detail in the document. However the range of grays will be more restricted as the maximum resolution is not necessarily ideal.

Example: An image scanned in Gray mode and pasted into HyperCard as an advanced halftone at a resolution of 72 dpi.

Document copied, saved or printed using the Advanced Halftone rendering at 72 dpi to demonstrate the dot pattern.

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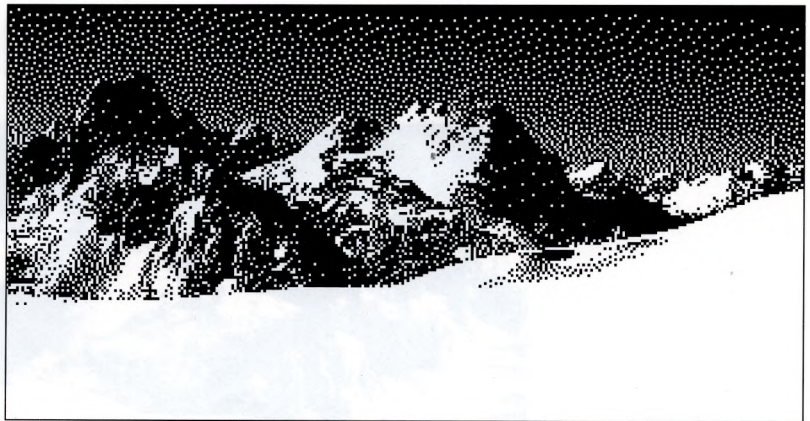
Screen Halftone

Screen Halftone simulates the grays of the original image with square patterns of black and white dots. If your Macintosh does not have a color monitor, then all images scanned in Gray mode are displayed in this way. This screen rendering is faster to process than Advanced Halftone but is less impressive. It is always available for documents scanned in Gray mode.

Example: A document which is to be printed exactly as it is seen on the screen, that is a 72 dpi screen halftone.

Screen Halftone rendering — compare the dot pattern to the Advanced Halftone rendering

High Contrast

High Contrast outputs the document as a black and white image. It is the only rendering option available for documents scanned in Line art mode and is always available for documents scanned in Gray mode.

Example: Text scanned for use with optical character recognition software.
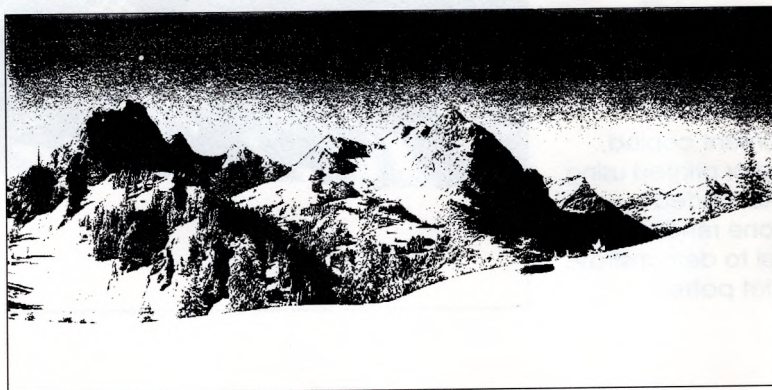
High Contrast rendering

Size

ScanMan enables you to choose the ideal size for your document. You may choose the following size options:

Same as screen

ScanMan will output the document at the size as it is displayed on the screen. This may not be exactly the same size as the original document because of the differences between the scanner resolution and the screen resolution. Note that zoom in and zoom out have no effect on the size of the output document.

Same as original

ScanMan will output the document at the size of the original paper image. Use this setting when you need to reproduce a document exactly as printed (a ruler, for example).

Custom

ScanMan will output the document at any size you wish. The maximum width and height are limited by the available memory.

If Keep proportions is chosen, then each time you enter a dimension, ScanMan will automatically calculate the other dimension to maintain the proportions of the original document.

In general, decreasing the size of a document improves the quality of the output since it increases the resolution.

Resolutions

ScanMan enables you to obtain the best possible quality for the output document by allowing you to specify the resolution at which it is ultimately printed or displayed. For example, choosing the correct resolution for your printer enables you to overcome the loss of quality which might result from printing a document at one resolution when created at another.

The resolution menu reflects the resolutions supported by your currently selected printer. For example:

Dpi	Printer	Notes
72 dpi	Screen or ImageWriter	Same as the screen resolution.
144 dpi	ImageWriter II	
216 dpi	ImageWriter LQ	
300 dpi	LaserWriter	
x dpi	"As your document"	Same resolution as your document.

Custom

Clicking on the Custom button enables you to specify a resolution which suits your needs. When you click on OK, ScanMan checks sizes and resolutions to see whether these are realistic.

File formats

ScanMan enables you to create, open, edit and save documents in the most popular image formats.

MacPaint

MacPaint is both the name of a paint program developed by Apple Computer, Inc and the name given to the type of document it creates. MacPaint documents have a fixed resolution of 72 dpi (1 bit per pixel) and a maximum size of 8 x 10 inches. Almost all other paint programs will open and save MacPaint documents.

MacPaint and 72 dpi 1-bit PICT files are used to:

- Transfer documents to applications which do not handle color, such as HyperCard.
- Print to low-resolution printers, such as the ImageWriter.

PICT/PICT2

PICT is the original graphic format defined by Apple Computer, Inc. The Clipboard, the Scrapbook, and many drawing application programs use this format. PICT is the most compact format for saving Gray mode documents.

PICT2 is an extension of the PICT format to support colors (including grays). For our purposes, the terms PICT and PICT2 are used interchangeably.

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TIFF (Tagged Image File Format)

TIFF (Tagged Image File Format) is the common file format for gray-scale images. It is an open-ended graphics standard, with many different variations and extensions. ScanMan opens most types of TIFF documents with the exception of those created using compression.

ScanMan creates and opens 1-bit TIFF and 8-bit TIFF formats:

Screen rendering	TIFF format
High Contrast	1-bit TIFF
Screen Halftone	1-bit TIFF
Advanced Halftone	1-bit TIFF
Gray	8-bit TIFF

The TIFF format is primarily used to:

- Save Gray mode documents for PageMaker, QuarkXPress, RagTime and other application programs that use the 8-bit TIFF format.
- Save Save Line Art mode documents for Streamline, OmniPage, and other application programs that use the 1-bit TIFF format.

Summary of output formats and applications

Examples of applications in which you can use ScanMan documents are:

Paint	MacPaint II, HyperCard, Director
Color paint	Studio/8, PixelPaint
High resolution paint	SuperPaint, Canvas 2
Word processors	Word, MacWrite, FullWrite, Nisus, WordPerfect
Object oriented programs	MacDraw II, Canvas, PowerPoint, More
DTP	PageMaker, RagTime, QuarkXPress
OCR	OmniPage, Read-It!
Vectorization	Streamline, Illustrator, FreeHand

The tables below suggest some ways in which you can obtain the best results for the target application.

Paint

| Target application | SCANNER | | SOFTWARE | | | | File type | Transfer method |
	Mode	Resolution	Mode	Rendering	Resolution	Size		
Paint	Dither	400	Gray	Adv. Half.	72	any	PAINT	Save
Paint (1)	Dither	400	Gray	Adv. Half.	72	any	PICT	Copy-Paste
High res. (2)	Dither	400	Gray	Adv. Half.	144-300	any	PICT	Any
Color (3)	Dither	400	Gray	Gray	72 66	as screen as doc.	PICT 2*	Any
Color (4)	Dither	400	Gray	Gray	72 66	as screen as doc.	TIFF*	Save
Paint (5)	Either	100	Line Art	H. Contrast	72	as screen	PAINT	Save
High res.	Either	300	Line Art	H. Contrast	300	as doc.	PICT	Any

Notes

(1) Best screen output for HyperCard.

(2) For non-PostScript printers.

(3) Best method for copy -paste.

(4) Preferred method of saving as further editing is still possible.

(5) Resulting image is 25% bigger than the original.

(*All files are saved as 1-bit per pixel unless indicated by an asterisk, in which case they are 8-bits per pixel.)

Draw

Target application	SCANNER Mode	Resolution	SOFTWARE Mode	Rendering	Resolution	Size	File type	Transfer method
Draw (1)	Dither	400	Gray	Adv. Half.	144-300	any	PICT	Any
Draw (2)	Dither	300	Line Art	H. Contrast	300	as doc.	PICT	Any
Draw	Line art	100-400	Line Art	H. Contrast	as scan	as doc.	PICT	Any

Notes

(1) For non-PostScript printers.

(2) Mixed mode — gives the best printout at 300 dpi but no rescaling is possible.

Word processors

Target application	SCANNER Mode	Resolution	SOFTWARE Mode	Rendering	Resolution	Size	File type	Transfer method
WP (1)	Dither	400	Gray	Adv. Half.	144-300	any	PICT	Copy-Paste
WP (2)	Dither	400	Gray	Gray	72	as screen	PICT 2*	Copy-Paste
					66	as doc.		
WP (3)	Dither	300	Line Art	H. Contrast	300	as doc.	PICT	Copy-Paste

Notes

(1) For non-PostScript printers.

(2) Best method of transferring for copy-paste.

(3) Mixed mode — gives the best printout at 300 dpi although no rescaling is possible.

DTP and other software

Target application	SCANNER		SOFTWARE			Size	File type	Transfer method
	Mode	Resol-ution	Mode	Render-ing	Resol-ution			
DTP (1)	Dither	400	Gray	Gray	72	as screen	TIFF*	Save
					66	as doc.		
DTP (2)	Dither	300	Line Art	H. Contrast	300	as doc.	PICT	Any
OCR (3)	Line art	300 or 400	Line Art	H. Contrast	as scan	as doc.	TIFF	Save
Vectori-zation (3)	Line art	400	Line Art	H. Contrast	400	as doc.	TIFF	Save

Notes

(1) Use Import or Place commands depending on the application.

(2) Mixed mode — gives the best printout at 300 dpi although no rescaling is possible.

(3) Gives the highest resolution.

NOTE   Also refer to the Graphic Format File Exchange chart (included in the original package, and available from your nearest dealer).

More about ScanMan

This chapter gives you some additional information on scanning modes in ScanMan and describes how you can prepare documents in ScanMan for:

- Converting from bitmaps into vectorized objects.
- Enhancing in low- and high-resolution paint programs.
- Incorporating into documents produced using DTP programs.
- Incorporating into word processing files.

Various ways of scanning an image

Although there are two basic scanning modes in ScanMan, there are in fact three ways of scanning an image:

- Line art mode
- Gray mode
- Mixed mode

LINE ART MODE

Line Art mode is useful for scanning black and white line drawings, diagrams, and text. This mode produces high-contrast images in black and white (no grays).

To use Line Art mode, set the mode switch on the scanner to Line Art and choose Scan Line Art from the Scan menu.

GRAY MODE

Gray mode is useful for scanning photographs, color images, and drawings where the high-contrast black or white character of Line Art mode detracts from the quality of the image.

To use Gray mode, set the mode switch on the scanner to one of the Dither positions and choose Scan Gray from the Scan menu.

The image is processed in two stages. First, the scanner head converts the tones in the image using a 6 x 6 dithering pattern, then the ScanMan software processes the dithering pattern further in order to create the 32 levels of gray. Notice that the actual resolution of the document is the resolution at which the image is scanned divided by six, that is an image scanned at 400 dpi has an actual resolution of 66 dpi. (400 ÷ 6 = 66)

MIXED MODE

The third, and less common method of scanning is Mixed mode. Mixed mode is useful for certain specialized applications, and for experimenting with ScanMan to produce different effects.

To use Mixed mode, set the mode switch on the scanner to one of the Dither positions and choose Scan Line Art from the Scan menu.

NOTE   Unlike Gray mode, the document retains the resolution of the scanner — although subsequent resizing might reduce the quality of the document.

Summary

Image type	On the scanner	In the software	Mode
Black and white images, text	Line art	Scan Line Art	Line Art
Tonal images[1]	Dither	Scan Gray	Gray
Tonal images[2]	Dither	Scan Line Art	Mixed

[1] Displays a gray image on color monitors or displays simulated grays using screen halftones.

[2] Creates a dithered, high-resolution image.

Dither settings

The three circles represent the size of the "grains" used to make up the grays on the screen — the smallest circle gives the smallest grain. This is the usual setting.

Moiré effects

If you are scanning an image which has already been "screened" (see *Glossary of terms*), such as a photograph printed in a magazine, then the dither pattern of the grays in the scanner may interact with the screen of the image to create a moiré effect.

You can minimize the moiré effect by scanning the image using the middle or largest grain. Alternatively, try rescanning the image with the scanner rotated a few degrees to the right or left.

Scanning horizontally

In ScanMan you can turn the image or the scanner sideways in order to scan. To scan horizontally, choose Direction from the Scan menu, and then choose the following option. You could also choose it in the Scan dialog box:
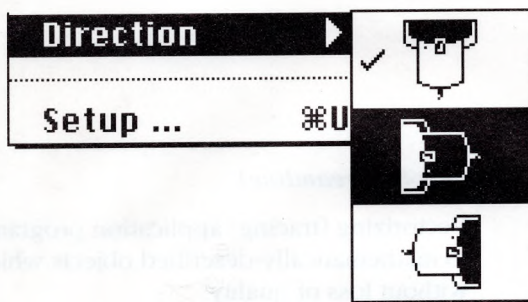
After scanning, ScanMan will automatically rotate the document to match the orientation of the original image.

Using ScanMan with other applications

Optical character recognition

(OmniPage, Read-It!)

Using ScanMan in conjunction with optical character recognition software, you can scan an image and convert it to text for use in a word processor or database.

For best results, scan text in Line Art mode at 300 dpi. (If the characters are particularly small, or if the quality of the original document is poor, scan at 400 dpi). Save your document in TIFF format, and follow the instructions included with your OCR application software.

You can scan two or more columns together. This is done by setting the width of the scan to 0.25 inches wider than the column width and unchecking the option Automatic Stop in the Setup dialog box.

Scan the first column. When you reach the bottom, release the Scan button, move the scanner to the top of the next column, and scan again. When you have scanned all the columns on the page, click on the Done button.

Your image will look like a single very-long column.
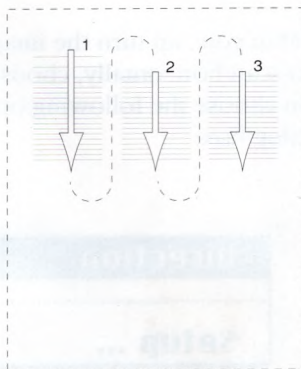
Vectorizing files

(Adobe Streamline)

Vectorizing (tracing) application programs enable you to convert images to mathematically-described objects which you can use at any size without loss of quality.

For best results, scan in Line Art mode at 400 dpi. In ScanMan, clean up the image as much as possible, otherwise the vectorization software will reproduce any imperfections when it converts the file.

Save your document in TIFF format, and follow the instructions included with your application software.

You can open converted files in Adobe Illustrator for further enhancement such as colorizing or rotating (in small increments) or place them in DTP programs such as Quark XPress, Ragtime or Ready Set Go! These will give you a high-resolution printout on a Linotronic or Compugraphic typesetter.

Working with paint or object oriented programs

PAINT PROGRAMS

(MacPaint, Studio/8, PixelPaint)

This type of paint program works only on 72 dpi documents. Using this type of program you can edit the document, add text, etc.

To create a document for this type of program, scan your image in either Gray or Line Art mode. Then, save it in MacPaint or TIFF format. (You can also transfer your image to this type of program using Copy and Paste).

HIGH-RESOLUTION PAINT PROGRAMS

(Canvas 2.0, SuperPaint 2.0)

High-resolution paint programs enable you to edit documents with a resolution greater than 72 dpi. You can colorize the document, change

its resolution, add text and generally edit it while working to precise measurements. You can scan the image in either Gray or Line art mode, save it in PICT format or transfer it using Copy and Paste.

Working with DTP programs

(PageMaker, Quark XPress, Ragtime 3, Ready,Set,Go!)

Desktop publishing programs enable you to combine your ScanMan images with text to create newsletters, brochures and other printed media. Most of these programs accept either PICT or TIFF format files:

- PICT format — Enables you to work with compact files, although you won't be able to change the display format of the document or the grays.
- TIFF format — You can alter the screen angle, dithering options and proportions of the document. In many DTP programs you can also define the screen (see *Glossary of terms*) that the printer will use to reproduce your document and alter the distribution of the grays.

NOTE   If you are using ScanMan's Advanced Halftone rendering, be sure that you adjust the size of your document in ScanMan while still in gray and not in the DTP program. Otherwise, you will loose image quality.

Working with word processors

(Microsoft Word, Word Perfect, WriteNow)

ScanMan documents can be used in word processing files. You should scan the image at 300 dpi and copy it to the Clipboard. If you want to print gray pictures, use the following versions of the System and printer software: System 6.03, Laser Prep 6.0 and Laser Writer 6.0 or later, otherwise the illustrations will not appear as grays. Alternatively, use the Advanced Halftone rendering and try different output resolutions.

If you want to use documents scanned in Line art mode, scan the image at the same resolution as your printer. The document may look disappointing on the screen but will give good results when printed.

The ScanMan menus

This chapter describes the commands on the ScanMan menus.

All **buttons** have a shortcut which consists of typing the first letter of the button name, for example D for Discard in the Close dialog box.

File menu

Open...
⌘O

Open... enables you to open Paint, TIFF or PICT documents. As you can only open one document at a time, the command is dimmed if a document is already open on the screen.

Close
⌘W

Close enables you to close the Document. ScanMan will prompt you to save it if you have not yet done so.
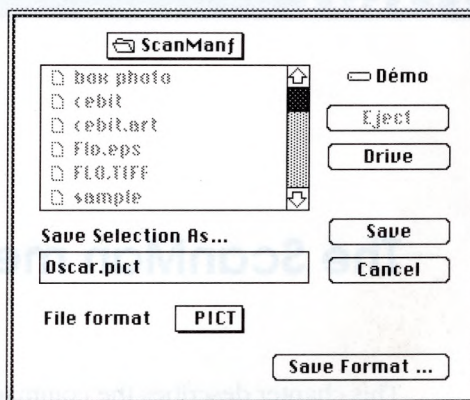
Save
⌘S

Save enables you to save the contents of the document.

Save As... / Save Selection As...

Save As... enables you to save a selection or an additional version of a document in various file formats, screen and printer resolutions.

```
┌─────────────────────────────────────────────┐
│  ┌───────────────────────────────────────┐  │
│  │         📁 ScanManf                    │  │
│  │  ☐ box photo          ⇧    ⊂ Démo      │  │
│  │  ☐ cebit                               │  │
│  │  ☐ cebit.art               ┌────────┐  │  │
│  │  ☐ Flo.eps                 │ Eject  │  │  │
│  │  ☐ FLO.TIFF                ├────────┤  │  │
│  │  ☐ sample             ⇩    │ Drive  │  │  │
│  │                            └────────┘  │  │
│  │  Save Selection As...      ┌────────┐  │  │
│  │  ┌──────────────────┐      │  Save  │  │  │
│  │  │ Oscar.pict       │      ├────────┤  │  │
│  │  └──────────────────┘      │ Cancel │  │  │
│  │                            └────────┘  │  │
│  │  File format    ┌─────┐                │  │
│  │                 │PICT │   ┌──────────┐ │  │
│  │                 └─────┘   │Save Format.│ │  │
│  │                           └──────────┘ │  │
│  └───────────────────────────────────────┘  │
└─────────────────────────────────────────────┘
```

FILE FORMATS

The following file formats are available when saving the document:

MacPaint Saves the top left corner of the document (that is 576 x 720 pixels) as a black and white bitmap at 72 dpi.
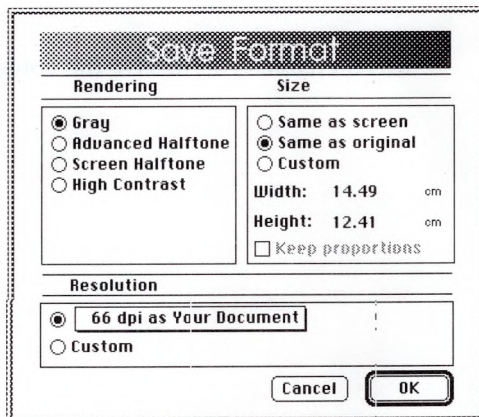
PICT Saves the document as a black and white bitmap. However, if the image is saved in the Gray rendering, then ScanMan automatically selects PICT2 format as this can store gray bitmaps.

TIFF This is the most common file format for gray or color pictures. If the image is saved in the Gray rendering, the format is 8-bit TIFF, otherwise it is 1-bit TIFF.

Once you have selected the file format, you can modify its setting by clicking on the SaveFormat button. This opens the Save Format dialog box.

```
┌───────────────────────────────────────────┐
│ ▓▓▓▓▓▓▓▓▓▓▓▓ Save Format ▓▓▓▓▓▓▓▓▓▓▓▓▓▓    │
│  ┌──────────────────┬──────────────────┐  │
│  │ Rendering        │ Size             │  │
│  │ ● Gray           │ ○ Same as screen │  │
│  │ ○ Advanced Halftone│ ● Same as original│ │
│  │ ○ Screen Halftone│ ○ Custom         │  │
│  │ ○ High Contrast  │ Width:  14.49  cm│  │
│  │                  │ Height: 12.41  cm│  │
│  │                  │ ☐ Keep proportions│ │
│  └──────────────────┴──────────────────┘  │
│  ┌─────────────────────────────────────┐  │
│  │ Resolution                          │  │
│  │ ● │ 66 dpi as Your Document │       │  │
│  │ ○ Custom                            │  │
│  └─────────────────────────────────────┘  │
│                    ┌────────┐ ┌────────┐  │
│                    │ Cancel │ │   OK   │  │
│                    └────────┘ └────────┘  │
└───────────────────────────────────────────┘
```

RENDERING

The choice of Rendering determines how the document will look when displayed or printed. There are four Rendering choices:

Gray	Outputs the document using gray levels.
Advanced Halftone	Outputs the document using error diffusion halftoning.
Screen Halftone	Outputs the document using simple halftoning.
High Contrast	Outputs the document in black and white (no grays). This is the only choice available for images scanned in Line Art mode.

SIZE

The choice of Size determines the size of the document when displayed or printed. There are three Size choices:

Same as screen	Outputs the document at the size displayed on the screen. This may not be exactly the same size as the original document because of the differences between the scanner resolution and the screen resolution. Note that zoom in and zoom out have no effect on the size of the output document.
Same as original	Outputs the document at the size of the original paper image. Use this setting when you need to reproduce a document at exactly its original size.
Custom	Outputs the document at any size you wish. The maximum width and height are limited by the available memory.
	If Keep Proportions is checked, then each time you enter a dimension, ScanMan will automatically calculate the other dimension to maintain the proportions of the original document.
	In general, decreasing the size of a document improves the quality of the output since it increases the resolution.

RESOLUTION

The resolution you choose depends on the final use of your document. You can relate this to the printer(s) installed in your System.

As your document	You can also choose a resolution based on the resolution of your document, for example an image scanned in Gray mode at 400 dpi will yield a resolution of 66 dpi. (400 ÷ 6).

CUSTOM

If your printer is not included in the list of printers you can specify its resolution, which can be from 1 to 2600 dpi — the maximum resolution depends on the available memory.

For further information on Save formats, see *Chapter 4: Output formats.*

Revert to Saved

Revert to Saved enables you to cancel the changes you have made to a document and go back to the last saved version of it. It is a quick way of closing the document without saving the changes, then reopening it.

Page Setup...

Page Setup... enables you to specify the paper size and the orientation of the document on the page. For further information, see the guide accompanying your Macintosh. If you have chosen a laser printer, please ensure that Graphics Smoothing is not selected. For further information, please see the *Macintosh System Software User's Guide.*

Print... / Print Selection...

⌘P

Print... enables you to print your document or selection. The Print dialog box contains two special features:

DOCUMENT TITLE

Whatever you type here will be printed at the bottom of the last page.

PRINT FORMAT...

Click on the Print Format... button to choose a rendering, size and resolution for your printout. For further information, see *Save As.../Save Selection As...* above and *Chapter 4: Output formats.*

Quit
⌘Q

Quit enables you to leave ScanMan.

Edit menu

Undo/Redo
⌘Z

Undo enables you to "undo" your last action. This might be a cut, copy, paste, rotate, resize, flip, invert or an editing action such as working with the Pencil, Brush or Eraser. Once you undo an action, you can redo it again by choosing Redo from the Edit menu. (You cannot undo the actions of the Magnifying Glass or Hand tools).

Cut
⌘H

Cut enables you to delete a selection. The deleted area is transferred to the Clipboard (in the same format as defined in the Copy As... dialog box) and is held there until the next Cut or Copy or until you shut down your Macintosh.

Copy
⌘C

Copy enables you to copy a selection. The selection is copied using the output format defined at the last use of Copy As.... The copy remains on the Clipboard until the next Copy or Cut or until you shut down your Macintosh.
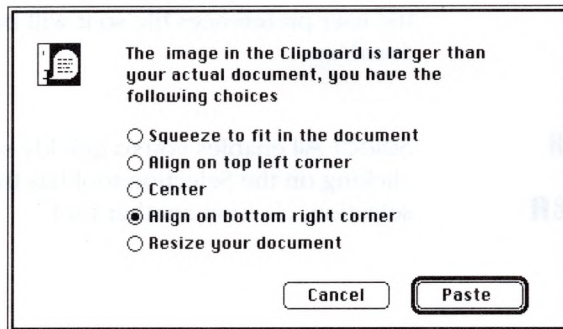
Paste
⌘U

Paste enables you to transfer an image from the Clipboard to the current document — the image then appears as a selection. If you have already made a selection, it is pasted inside the selection frame. If the proportions of the image and selection frame are different, ScanMan stretches or compresses the image to make it fit.

You can paste images from other applications which contain more colors or grays than are supported by ScanMan. ScanMan will interpret these in the best way possible.

If the image on the Clipboard is too large to fit in the current document, ScanMan will display the Paste Options dialog box.

The image in the Clipboard is larger than your actual document, you have the following choices

○ Squeeze to fit in the document
○ Align on top left corner
○ Center
● Align on bottom right corner
○ Resize your document

[Cancel] [Paste]

SQUEEZE TO FIT IN THE DOCUMENT

ScanMan reduces the image to fit in the document — the proportions are not retained.

ALIGN ON TOP LEFT CORNER

ScanMan aligns the image with the top, left corner of the document and deletes any part of it which protrudes beyond the document.

CENTER

ScanMan centers the image in the document and deletes any area of it which protrudes beyond the document.

ALIGN ON BOTTOM RIGHT CORNER

ScanMan aligns the image with the bottom right corner of the document and deletes any area of it which protrudes beyond the document.

RESIZE YOUR DOCUMENT

ScanMan expands the document by adding empty space so that the image will fit in it — the content of the document is not affected by this.

Clear

Clear enables you to delete the selection without transferring the deleted area to the Clipboard. Double-clicking on the Eraser has the same effect.

Copy As...
⌘K

Copy As... enables you to copy the selection to the Clipboard using a particular rendering, size and resolution.

For further information on renderings, size and resolution, see *Save As...* above or *Chapter 4: Output formats.*

The setting you choose in the Copy Format dialog box is used for all subsequent Cut, Copy and Copy As... commands. It is also saved in the user preferences file so it will be the same when you next open ScanMan.

Select All
⌘A

Select All enables you to quickly select the whole document. Double-clicking on the Selection tool has the same effect. To deselect the selection, click on another tool.

Show Info/
Hide Info
⌘I

Show Info displays the Info window. This window acts as a ruler, showing the dimensions of any selection and displaying the current zoom factor. Hide Info closes the Info window.

You can change the units of measurement by clicking on the word "cm" or "inch".

Show Clipboard/
Hide Clipboard
⌘B

Show Clipboard displays the Clipboard window. This window shows the result of the most recent Cut or Copy. Hide Clipboard closes the Clipboard window

Zoom In

Zoom In enables you to magnify your document — it duplicates the function of the Magnifying Glass. The zoom factor is displayed in the Info window.

Zoom Out

Zoom Out enables you to reduce the scale at which your document is displayed — it duplicates the function of the Magnifying Glass. The zoom factor is shown in the Info window.

Scan menu

Scan Line Art
⌘F

Scan Line Art creates a document containing only black and white (no gray). Text and technical drawings are examples of images which are best scanned in Line Art mode.

For information on how to Scan, see *Chapter 2: Running ScanMan.*

The image will be displayed on the screen in just black and white. In this mode, you cannot alter the brightness or contrast, or save it using any rendering other than High Contrast.

Scan Gray
⌘G

Scan Gray creates a document containing 32 shades of gray, from black to white. If you have a color monitor, these grays will be displayed on your screen. If not, the grays will be simulated using halftones (patterns of black and white dots).

Photographs are best scanned in Gray mode.

In Gray mode, you can alter the brightness and contrast of the document, edit it in various ways and save it using various renderings. See *Chapter 4: Output formats.*

Direction

You can scan images vertically or horizontally, from left to right or from right to left. For example, by choosing a horizontal orientation you can scan the image sideways. (The image is displayed vertically in the Scan dialog box).

You can also choose the scanning direction by clicking on one of the direction icons in the Scan window.

Setup

⌘U

Setup enables you to select the units of measurement and set various options which affect the way in which you scan. You can use Setup to re-activate the scan commands if these are dimmed.

CM/INCHES

You can choose between centimeters or inches as a unit of measurement. This will affect the way the dimensions are displayed in the Setup and Scan dialog boxes and in the Info window.

SCAN WIDTH

The maximum width of an image that the scanner can accommodate is 4.2 inches (10.5 centimeters). If you want to scan a particularly long or complex image and you find that your Macintosh does not have enough memory, then reduce the resolution or scan width. Adjust the scan width by dragging the slider.

ScanMan calculates the scan width from the left end of the scanner window, so when scanning an image, position the left side of the scanner window against the left side of the image.

AUTOMATIC STOP

When Automatic stop is chosen, ScanMan will automatically terminate scanning in a few seconds after you stop moving the scanner, even if you are holding down the Scan button.

When Automatic stop is not selected, you have to tell ScanMan when you have finished scanning an image (by clicking on the Done button or pressing the Return key).

DISPLAY WHILE SCANNING

Display while scanning is usually selected. When it is selected, you can see a part of the document appear in the Scan dialog box as you are scanning. On slower machines such as the MacPlus you may want to deselect this option in order to be able to move the scanner faster.

Tools menu

You can choose the tools either from a tear-off menu, that is from a palette which is open on the desktop, or from a pull-down menu on the menu bar.
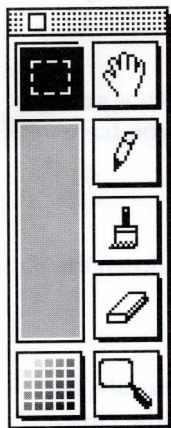
TEARING OFF THE TOOLS MENU

You can "tear off" the Tools menu so that you can have constant access to it as you work. Just drag through it, past the bottom or off to one side; then leave it where you want it. Click in its close box to make it go away.

CHOOSING A TOOL

To choose a tool from the Tools palette, click on it. This tool remains chosen as the "current tool" until you choose another one. However, you can choose certain tools without having to deselect the current one. For example, you can:

- Scroll the document by holding down the space bar — this temporarily selects the Hand.
- Zoom into the document by holding down the Command key or zoom out by holding down the Command and Option keys — this temporarily selects the Magnifying Glass.

There are various shortcuts for the tools. To activate a shortcut, double-click on the tool in the Tools palette. If you are working with the pull-down Tools menu, hold down the Command key while you choose a tool to activate its shortcut. See *Keyboard shortcuts and constraints* for further details.

The tools are described in alphabetical order below.

Brush

Use the Brush to paint in grays using strokes of varying sizes and shapes — there is a wide selection to choose from. To choose a shape and size for the Brush:

1. Double-click on the Brush to open the Brush Shapes dialog box from the Tools palette.
2. Click on the brush shape you require.

Please note that the size of the tools does not change when you zoom. Therefore, they may draw surprisingly large areas when you have zoomed-in.

CONSTRAINT
- To paint in a vertical or horizontal straight line, hold down the Shift key before you click to start painting.

Eraser

Use the Eraser to delete areas of the document. These areas always revert to white. The Eraser always deletes the area under the cursor.

CONSTRAINT
- To erase in a horizontal or vertical direction only, hold down the Shift key before you click to start erasing.

SHORTCUT
- To erase a selection, double-click on the Eraser in the Tools palette. If nothing is selected, then this erases the contents of the Document.

Hand

Use the Hand to scroll the document if it is too large for the Document window.

SHORTCUTS
- When you are working with the other tools, you can temporarily select the Hand by holding down the space bar.
- To move to the **top left corner** of the document, double-click on the Hand in the Tools palette.
- To move to the **bottom right corner** of the document, hold down the Shift key and double-click on the Hand in the Tools palette.

Magnifying Glass

Use the Magnifying Glass to change the scale at which the document is displayed.

ZOOMING INTO THE DOCUMENT

The Magnifying Glass tool enables you to zoom in on any part of your document. Each time you click on your document, it zooms in further (providing greater magnification). Once you reach the maximum zoom, the + sign disappears.

The Document window does not change size as you zoom in, so you may want to resize it for convenience.

ZOOMING OUT OF THE DOCUMENT

If you want to zoom out of the document, hold down the Option key before clicking. The Magnifying Glass cursor will contain a minus sign. Once you reach the minimum zoom the minus sign disappears.

The Document window automatically shrinks to accommodate the smaller size of the displayed document.

SHORTCUTS

- In the Tools palette, double-click on the Magnifying Glass to switch from a zoom factor of 1:1 to a preview of the whole document.
- You can temporarily choose the Magnifying Glass to zoom in by holding down the Command key. Hold down the Command and Option keys to zoom out.

Shade Palette

The Shade Palette allows you to choose a gray for use with the Paint Brush. To choose a gray:

1. Click on the Shade button.
2. Choose a gray by clicking on it. The current gray is highlighted.

To close the Shade Palette without changing the gray, click on the current gray.

NOTE   Depending on the Brightness and Contrast settings, all of the grays may not be available.

Pencil

Use the Pencil to draw lines or to retouch small areas of the document when necessary. The Pencil will draw in the opposite color to the color of the pixel on which you first click. This will be either black or white since all grays are considered as white.

CONSTRAINT

- Draw in a vertical or horizontal straight line by holding down the Shift key before you click to start drawing.

SHORTCUTS

- Zoom in to the maximum possible magnification by double-clicking on the Pencil.
- Zoom out by double-clicking on the Pencil again.

Selection

Use the selection tool to select a rectangular area of the image. Drag diagonally to select.

Once you have created a selection, you can move it, change its size, delete, copy and save it, etc.

If you need to create a selection of a particular size, choose Show Info from the Edit menu. This will cause the Info window to appear. It shows you the size of your selection as you create it.

CONSTRAINT

- Make a square selection by holding down the Shift key as you drag.

SHORTCUTS

- Select the whole document by double-clicking on the Selection tool in the Tools palette.
- Make a selection transparent by pressing the Tab key. To make a transparent selection opaque again, press the Tab key again.

MOVE SELECTION FRAME

If the selection you have created isn't exactly where you want it, you can move the frame of the selection (without changing the document).

1. Make a selection.
2. Point to the frame of the selection. Your cursor will change to look like this:
3. Drag the frame to position it where you want it.

MOVE SELECTION

Once you have selected an area, you can drag it to where you want.

1. Make a selection.
2. Point inside of the selection. Your cursor will change to look like this: ✛
3. Drag the selection to position it where you want it.

CONSTRAINT

- To force a straight vertical or horizontal motion, hold down the Shift key as you move the selection or frame.

RESIZE SELECTION

To resize a selection:
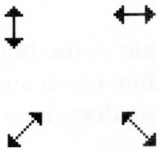
1. Hold-down the Command key while you point to the edge or corner of the selection. The cursor will change shape to indicate the direction in which you will be able to stretch the picture.
2. Resize the selection by dragging in the desired direction.

CONSTRAINT

- If you also hold down the Shift key, ScanMan will maintain the original proportions as you resize the selection.

Transform menu

Using the commands on the Transform menu, you can rotate, flip or invert the selection.

**Rotate Left/
Rotate Right**

⌘L ⌘R

Rotate Left and Rotate Right rotate the selection 90° to the left or right.

If the rotated selection is too large to fit in the document, ScanMan will display the Rotate Options dialog box.

After rotation, the selection will not fit in your actual document, you have the following choices

○ Squeeze to fit in the document
○ Align on left or top
● Center
○ Align on right or bottom
○ Rotate your document too
○ Resize your document

[Cancel]   [[Rotate]]

SQUEEZE TO FIT IN THE DOCUMENT

ScanMan reduces the rotated selection so that it fits into the document. The proportions are not retained.

ALIGN ON LEFT OR TOP

ScanMan aligns the rotated selection with either the left or the top edge of the document depending on the "offending" dimension and deletes any of the selection which protrudes beyond the document.

CENTER

ScanMan centers the rotated selection horizontally or vertically and deletes any area of it which protrudes beyond the document.

ALIGN ON RIGHT OR BOTTOM

ScanMan aligns the rotated selection with either the right or the bottom edge of the document depending on the "offending" dimension and deletes any of the selection which protrudes beyond the document.

ROTATE YOUR DOCUMENT TOO

ScanMan rotates the entire document along with the selection thus changing the orientation of the document.

RESIZE YOUR DOCUMENT

ScanMan expands the document adding empty space so that the rotated selection will fit. This does not affect the content of the document.

Flip Horizontal

⌘H

Flip Horizontal flips the selection along a vertical axis through the center of the selection.

Flip Vertical

⌘Y

Flip Vertical flips the selection along a horizontal axis through the center of the selection.

Invert

⌘J

Invert changes the color of each pixel to its opposite color, so creating the effect of a "negative".

Keyboard shortcuts

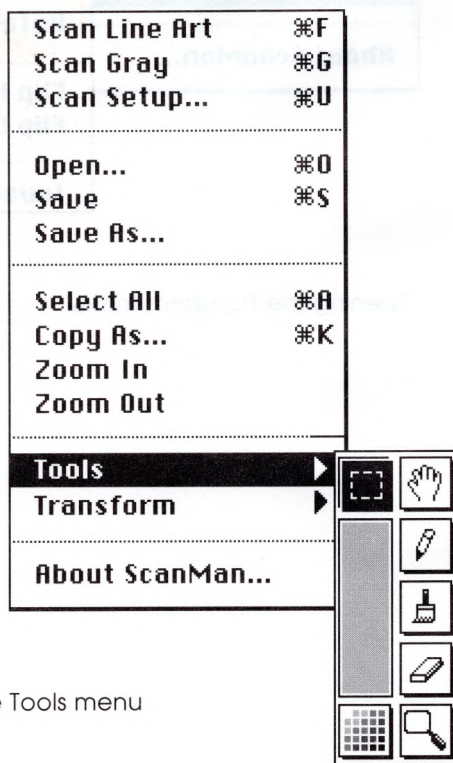By holding down the Shift, Option or Command keys you can modify the current tool.

When the Tools menu is torn off, you can activate a tool's shortcut by double-clicking on the tool. However, when the Tools menu is not torn off, it is not possible to double click on a tool. In this case, you can activate a tool's shortcut by holding-down the Command key while you choose the tool.

Tool	Double-click or Command-click	Shift key (Constraint)	Option key	Command key	Space bar
Hand	Scroll to top left	Scroll to bottom right	Scroll faster	Magnifying Glass	
Pencil	Switch between original size and maximum zoom	Draw in a straight line		Magnifying Glass	Hand
Magnifying Glass	Switch between preview and zoom 1:1		Zoom out		Hand
Eraser	Clear selection or whole document	Erase in a straight line		Magnifying Glass	Hand
Brush	Choose Brush shape or size	Paint in a straight line		Magnifying Glass	Hand
Selection	Select the whole document	Move in a straight line, create a square selection	Make a copy by dragging the selection	Magnifying Glass	Hand

ScanMan as a Desk Accessory

ScanMan is supplied both as an application and as a desk accessory. The ScanMan DA has most of the functions of the application. You can:

- Scan both in Line Art and Gray modes.
- Edit the document using the tools in the Tools menu and Rotate, Flip and Invert in the Transform menu.
- Output your image in various formats using the Copy As... or Save As... commands.

Scan Line Art	⌘F
Scan Gray	⌘G
Scan Setup...	⌘U
Open...	⌘O
Save	⌘S
Save As...	
Select All	⌘A
Copy As...	⌘K
Zoom In	
Zoom Out	
Tools	▶
Transform	▶
About ScanMan...	

Opening the Tools menu

You may find the ScanMan DA useful if you do not have enough memory to run MultiFinder. If you use MultiFinder, it is strongly recommended that you use ScanMan as an application rather than a desk accessory.

For information on installing the ScanMan DA, see *Chapter 1: Installation*.

Scan Line Art	⌘F		
Scan Gray	⌘G		
Scan Setup...	⌘U		
Open...	⌘O		
Save	⌘S		
Save As...			
Select All	⌘A		
Copy As...	⌘K		
Zoom In			
Zoom Out			
Tools	▶		
Transform	▶	**Rotate Left**	⌘L
		Rotate Right	⌘R
About ScanMan...		**Flip Horizontal**	⌘H
		Flip Vertical	⌘Y
		Invert	⌘J

Opening the Transform menu

Installing the scanner when one or several SCSI devices are already attached

The ScanMan scanner is connected to your Macintosh via a SCSI adaptor box. You can connect as many as seven SCSI devices to the Macintosh which are then linked in a chain. Each device has a unique identification (ID number) which determines the order in which it sends and receives information.

Checking ID numbers

The first step <u>before</u> installing the ScanMan SCSI Adaptor Box is to ensure that no two SCSI devices share the same ID number.

There are eight ID numbers, 0 to 7:

- 0 is often used by a built-in, internal hard disk.
- 2 is assigned to the LOGITECH scanner (as the default).
- 7 is reserved for the Macintosh computer and cannot be changed.

To check the ID numbers of other devices attached to your Macintosh:

1. Switch on all the SCSI devices.
2. Switch on your Macintosh.
3. Double-click on the ScanMan icon to open ScanMan.

A dialog box appears on the screen listing the eight ID numbers:

```
╔══════════════════════════════════════════════╗
║ ┌──────────────────────────────────────────┐ ║
║ │                                          │ ║
║ │          ScanMan not found               │ ║
║ │                                          │ ║
║ │   SCSI ID:  0  1  2  3  4  5  6  7        │ ║
║ │             ⇐  -  ⇐  -  -  -  -  ▤        │ ║
║ │                                          │ ║
║ │    ┌────────┐  ┌─────────────────────────┐│ ║
║ │    │  Quit  │  │ Continue Without Scanner ││ ║
║ │    └────────┘  └─────────────────────────┘│ ║
║ └──────────────────────────────────────────┘ ║
╚══════════════════════════════════════════════╝
```
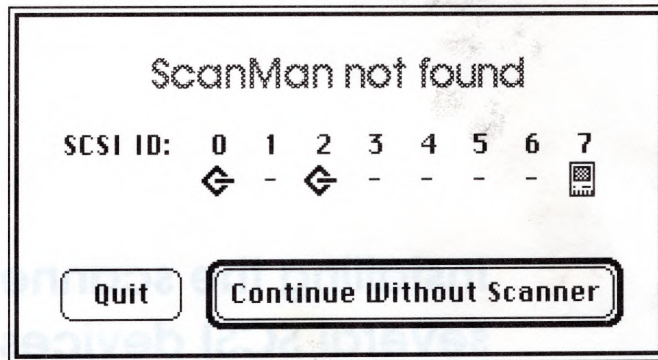
4. Check whether ID 2 is vacant. If it isn't, make a note of one of the other free ID numbers — you will be able to use this number for ScanMan.

Changing the ID number of the scanner

If you discover that ID 2 (the default ID number of the scanner) is already used by another device, you will have to change the ID on the ScanMan SCSI Adaptor Box to a different number.

To change the ID number:

1. Turn the SCSI Adaptor Box so that you can see a small red dial set into the back. This is surrounded by the numbers 0 to 7 which represent various possible ID numbers. An arrow-shaped cut-out in the dial tells you the current ID number. It is normally pointing at the number 2.

2. Using a small screwdriver, turn the dial to one of the ID numbers which you earlier noted as being available.

Checking for correct termination

The next step is to check for correct termination. Your computer system should contain no more than two terminators. One terminator is located at the beginning of the chain of devices and one at the end; more terminators could damage your computer or cause loss of data.

Most SCSI devices are supplied already terminated. The ScanMan scanner, for example, contains internal terminators on its circuit board, although other devices may be supplied with an external cable terminator.

1. Find out whether any of your other SCSI devices contain terminators. You can do this by referring to the relevant product documentation.

2. In order to decide which devices require terminators and which do not, work out which one of the configurations shown below applies to your system.

Macintosh without
internal hard disk

Terminated SCSI
device

Terminated SCSI
device

ScanMan SCSI
Adaptor Box
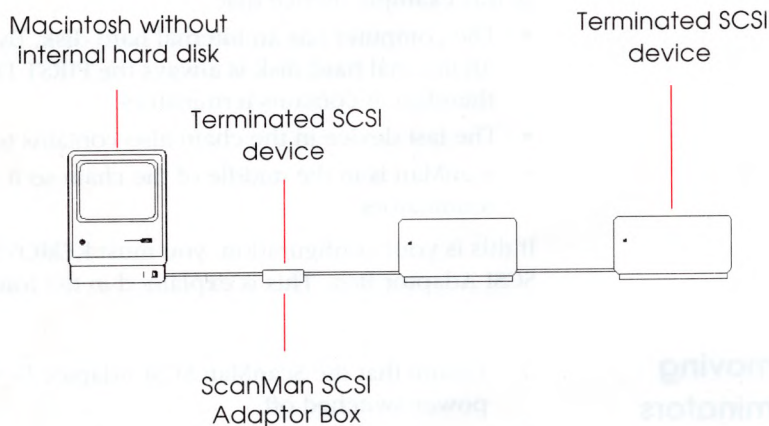
In this example, notice that:

- The computer has no internal hard disk. Therefore it is not part of the "chain", and so contains NO terminators.
- ScanMan is the FIRST DEVICE in the chain so it should contain terminators.
- The last device in the chain also contains terminators.

If this is your configuration you DO NOT need to remove the three terminators from the SCSI Adaptor Box. You can therefore follow the instructions given in the section *Connecting the SCSI Adaptor Box and scanner* in *Chapter 1*.

Macintosh with
internal hard disk

ScanMan SCSI
Adaptor Box

Terminated SCSI
device

Terminated SCSI
device

In this example, notice that:

- The computer has an internal hard disk. By default, a Macintosh with an internal hard disk is always the FIRST DEVICE in a chain and therefore it contains terminators.
- The last device in the chain also contains terminators.
- ScanMan is in the middle of the chain so it should NOT contain any terminators.

If this is your configuration, you must REMOVE the terminators from the SCSI Adaptor Box. This is explained in the following section.

Removing terminators from the SCSI Adaptor Box

1. Ensure that the ScanMan SCSI Adaptor Box is unplugged and the power switched off.
2. Using a Philips screwdriver (size 1), remove the four crosshead screws from the base of the SCSI Box. Then lift off the cover.

Crosshead screws
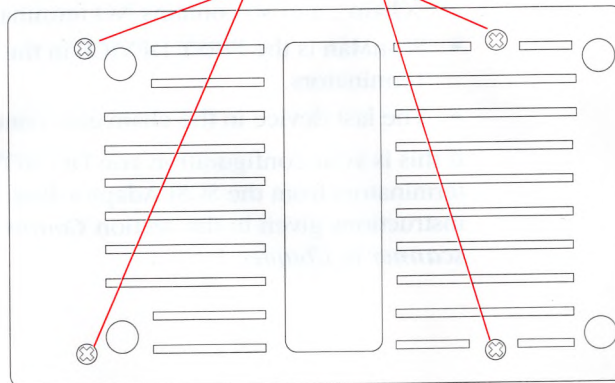
3. Locate the three terminators on the printed circuit board.

Terminators

Mark this end of the terminator
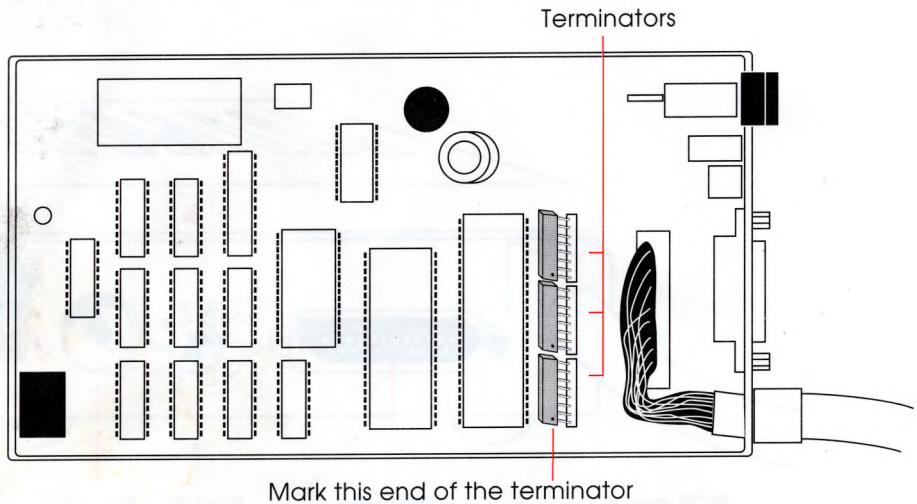
4. So that you can replace the terminators in the future, make a note of the direction in which each one is facing and mark the lower end of each terminator with, for example, paper correction fluid.

5. Using a screwdriver, gently lever up each end of each terminator, but take great care not to bend the pins. Remove them and put them in a small container or bag and keep them in a safe place in case you need to use them again.

Connecting the SCSI Adaptor Box

Logitech recommends that you connect ScanMan to the SCSI port of your Macintosh and then attach the other SCSI devices to the ScanMan SCSI Adaptor Box rather than to the Macintosh.

1. Ensure that the Macintosh and all SCSI devices are switched off.

2. Disconnect the SCSI device which is already attached to your Macintosh.

3. Position the ScanMan SCSI Adaptor Box between the Macintosh and other SCSI devices.

4. Plug the SCSI device (which you disconnected in step 2) into the SCSI port on the back of the ScanMan SCSI Adaptor Box.

SCSI cable   SCSI port   SCSI ID   Power
                                  selector
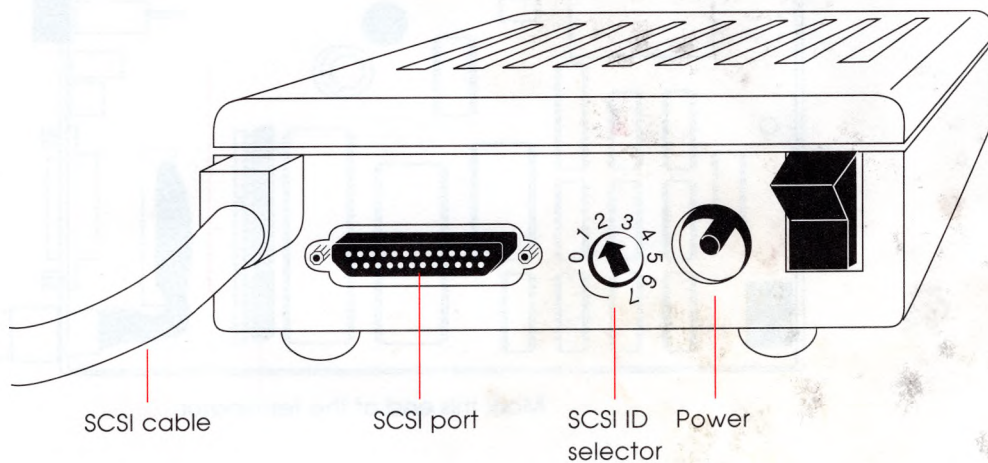
5. Remove the plastic cover on the scanner's mini-plug.
6. Plug the scanner into the front of the SCSI Adaptor Box.
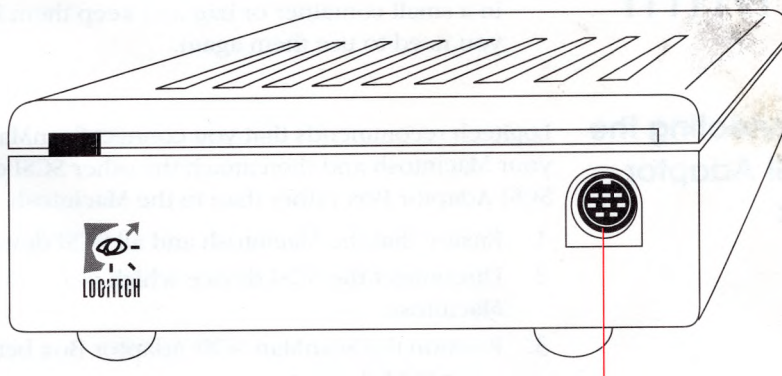
Connect the mini-plug to the
scanner port here

7. Insert the connector from the power supply into the socket on the back of the SCSI Adaptor Box.

8. Plug the power supply into an electrical outlet.

9. Plug the SCSI cable attached to the back of the ScanMan SCSI Adaptor Box into the SCSI port on the Macintosh.

    Regardless of the Macintosh model you have, you can always identify the SCSI port by looking for one of the following symbols:

10. Switch on the ScanMan SCSI Adapter Box. The green light on the front should be on steady. If it blinks, there may be a SCSI interface problem. Check first to make sure you have switched on all your devices and, if the problem persists, consult your Technical Support service.

IMPORTANT You should always switch on the SCSI Adaptor Box and all other SCSI devices *before* switching on the Macintosh. Apple Computer, Inc recommend that you do not run your Macintosh with any SCSI devices switched off — it could damage the data on your hard disk.

11. Switch on your Macintosh.

You have now installed the ScanMan hardware. If you want a brief introduction to scanning, then read *Chapter 2: Running ScanMan.* If you have some experience in the use of scanners, then read *Chapter 4: Output formats.*

Technical specifications —
ScanMan Model 32

SCSI Adaptor Box

Dimensions:	120 x 200 x 36 mm (4.7" x 7.8" x 1.4")
Weight:	Approx. 800 g (1lb 12oz)
Cable length:	1 m (3' 3")
Cable connector:	DB 25 pins male connector
External connector:	DB 25 pins female connector
	Mini Din 8 pins female connector
Compatibility:	SCSI protocol ANSI X3T9.2/82-2
Power consumption:	16 VA
Input voltage:	12 V AC

Power supply adaptor

Dimensions:	64 x 64 x 87 mm (2.5" x 2.5" x 3.4")
Weight:	500 g (1lb 1½oz)
Cable length:	2 m (6' 6")
Cable connector:	DC jack 2.5 mm
Input voltage:	220 / 240 / 110 V AC 50-60Hz (depending on country)
Output voltage:	12 V AC
Maximum power:	15 VA

Hand-held scanner

Dimensions:	136 x 140 x 35 mm (5.3" x 5.5" x 1.4")
Weight:	310 g (10 $^3/_4$ oz)
Cable length:	2 m (6' 6")
Cable connector:	Mini Din 8 pins male connector
Reading width:	105 mm (4.2")
Resolution (selectable):	4 dots/mm (100 dpi)
	8 dots/mm (200 dpi)
	12 dots/mm (300 dpi)
	16 dots/mm (400 dpi)
Effective line:	420 pixels/line (100 dpi)
	840 pixels/line (200 dpi)
	1260 pixels/line (300 dpi)
	1680 pixels/line (400 dpi)
Mode change:	Halftone or black and white
Tones:	32
Halftone:	6 x 6 dither method
Dither pattern (selectable):	Net point
	Concentration point
	Balance net point

Using ScanMan on a Macintosh with 1MB of memory

Possible restrictions

Image processing is memory intensive, so using ScanMan on a 1 MB machine will impose some restrictions on the size of an image and how you edit and copy a document.

IMAGE SIZE

The higher the resolution you choose, the smaller the image you can scan.

EDITING THE DOCUMENT

If all the available memory is taken up in scanning an image, then some editing functions such as rotating, flipping or copying large selections will not be possible.

COPYING THE DOCUMENT

You can save a document at its original resolution and size since this does not require additional memory. However, if you intend to copy a document, then there must be sufficient memory for the Clipboard to hold the data.

NOTE You can find out the amount of free memory in your Macintosh by choosing "About the Finder" from the Apple menu.

Possible solutions

There are several ways of increasing the amount of memory available for scanning. Here are a few ideas:

REMOVE UNUSED FONTS AND DESK ACCESSORIES

You can reduce the size of your System file by removing unused fonts and desk accessories using the Font D/A Mover.

You could also remove any INITS (small applications which are automatically loaded into memory when you start up your Macintosh), FKEYS (function keys to which you have assigned additional functions) and sounds.

TURN OFF THE RAM CACHE

Some memory is used by the System to speed up disk accesses. This memory is called Ram Cache. You can turn off or reduce Ram Cache by choosing the General icon in the Control Panel under the Apple menu. Click on the Off button, then restart your Macintosh.

REDUCE THE SCAN WIDTH

If you don't need the full scanner width to scan your image, then reduce it in the Setup dialog box. This will increase the available length by the same proportion.

REDUCE THE RESOLUTION

By reducing the resolution, you can greatly enlarge the size of the images which you can scan. For example a 4" x 4" image scanned in Line art mode will take approximately the following amounts of memory:

Resolution (dpi)	Total no. of dots	No. of Kbytes
400	2,560,000	320
300	1,440,000	180
200	640,000	80
100	160,000	20

You can compute the size (in bytes) of a Line Art document using the formula:

$$\frac{length \times height \times resolution^2}{8}$$

EDIT ON A MACINTOSH WITH MORE MEMORY

You can always save your document in TIFF format and edit it later on a Macintosh with more memory.

IMPORTANT   Depending on the rendering, size and resolution you choose for your document when you save it, you may find that images which are particularly large or have a high resolution may be so big that you won't be able to open them again on a 1MB Macintosh.

ScanMan

Advanced halftone

A type of screen rendering which uses error diffusion halftoning — the simulated "grays" are diffused slightly and this gives a softer appearance to the document.

Color monitor

In this manual, any monitor which supports 256 or more colors or grays. See *Color support* below.

Color support

Any Macintosh which supports color processing, for example the Macintosh II and the Macintosh SE/30 (even if it doesn't have a color monitor).

Dither

The matrix of dots used to simulate grays.

Document

The image once scanned and displayed on the screen.

Dots per inch

The resolution of a document displayed on a computer screen or printed out from a computer is measured in dots per inch (dpi). Typical resolutions are:

72 dpi	Macintosh monitor and ImageWriter printer
144 dpi	ImageWriter II printer
300 dpi	LaserWriter printer
1200 dpi	Linotronic printer

See also *Resolution*.

Gray mode

A scanning mode used in ScanMan for images which you want to display either as grays (on a Macintosh with color monitor) or as simulated grays. Generally used for scanning images containing areas of continuous tone such as photographs.

Gray scale

Each dot making up the document on the screen is given an analog gray value. In ScanMan there are 32 possible values.

Halftone

Originally a printers' term for a black and white image printed from a treated metal plate containing dots of varying sizes. The size of the dots determining the shading in the image. In ScanMan, the halftone technique is used to simulate grays on monitors which support less than 256 colors.

High contrast

A screen rendering used in ScanMan to display documents scanned in Line art mode, or for displaying gray scale documents in black and white only.

Image

The original artwork which is scanned by the ScanMan scanner.

Line art mode

A scanning mode used in ScanMan which does not convert the image into a gray scale document. Generally used for scanning line drawings or text.

MacPaint

A standard Macintosh MacPaint format used by ScanMan which saves the black and white document (scanned using either Line art or Gray mode) as a bitmap. It has a low resolution: 72 dpi.

Moiré

Patterns occasionally caused when scanning printed photographs. See *Screen*.

PICT

A standard Macintosh format used by ScanMan which saves the document (scanned either in Line art or Gray mode) as a black and white bitmap file. It has a low resolution: 72 dpi.

PICT2

A standard Macintosh format used by ScanMan which saves images scanned in Gray mode as a color bitmap (only on Macintoshes with color support). ScanMan will automatically select this format, if necessary, when you choose the PICT format.

Pixel

Documents are displayed using the pixels of the computer screen. These are the smallest visible elements of the screen.

Rendering

The way in which the scanned image is output by ScanMan, that is saved, printed and copied. There are four rendering types: Gray, Advanced Halftone, Screen Halftone and High Contrast.

Resolution

The resolution determines the fineness of the document, whether it is displayed on the screen or printed on paper. The resolution is measured in dots per inch (dpi). All documents are displayed on the screen at 72 dpi but can be scanned or output at a variety of resolutions.

Screen

A printers' term for a very fine mesh through which artwork such as a photograph is re-photographed when preparing it for reproduction. The fineness and "angle" of the mesh varies and is often visible if you look closely at a photograph printed in a magazine. If you scan a photograph which has already been screened, the pattern of the screen can conflict with the dither patterns used by the scanner, so causing a moiré effect.

Screen halftone

A type of rendering which uses simple dithering techniques.

SCSI

SCSI (pronounced "SKUH'-ZEE") stands for Small Computer System Interface. The SCSI specification which standardises the connection of peripherals to small computers was developed by various companies and approved by the American National Standards Institute (ANSI). The SCSI interface allows the exchange of data between your computer and up to seven devices which can be attached to it via the SCSI port.

TIFF (Tagged Image File Format)

A standard Macintosh format used by ScanMan which saves images scanned in any mode as a high-resolution bitmap.

ScanMan

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